

WHAT IS CLAIMED IS:

Claim 1. A cutting tool assembly comprising:

an arbor including a tapered shank portion which has a taper of 7/24 and a size of No.30;

5 a cutting tool having at least one cutting blade and fastened to said arbor;

a fastener for fastening said cutting tool to said arbor; and

10 a relative-rotation preventing mechanism for preventing rotation of said cutting tool relative to said arbor;

wherein said cutting tool assembly has a weight of not larger than 3 kg;

wherein said arbor and said cutting tool have respective contact surfaces which are held in contact with each other;

15 and wherein said relative-rotation preventing mechanism is provided by at least one receiving hole which is formed in one of said contact surfaces, and at least one protrusion which is formed on the other of said contact surfaces and which is received in said at least one receiving hole.

20 **Claim 2.** A cutting tool assembly according to claim 1, wherein each of said at least one protrusion is provided by a pin which is fitted in a fitting hole formed in said other of said contact surfaces.

25 **Claim 3.** A cutting tool assembly according to claim 1, wherein said cutting tool has a positioning hole which is formed in a central portion of the contact surface of said cutting tool, while said arbor has a positioning boss which is formed on a central portion of the contact surface of said arbor and which is received in said positioning hole,

30 and wherein said positioning hole and said positioning boss have an inside diameter and an outside diameter, respectively, which are not smaller than 22 mm and are not larger than 27 mm.

Claim 4. A cutting tool assembly according to claim 1, wherein said cutting tool has an axial length that is not larger than 40 mm.

5 **Claim 5.** A cutting tool assembly according to claim 1, wherein a number of said at least one cutting blade is not larger than six.

10 **Claim 6.** A cutting tool assembly according to claim 1, wherein said arbor includes an annular flange portion which provides the contact surface and which has a pair of driving slots formed in an outer circumferential surface of said annular flange portion,

wherein each of said at least one protrusion is provided by a pin which is fitted in a fitting hole formed in said other of said contact surfaces,

15 and wherein said fitting hole is positioned relative to said pair of driving slots such that said fitting hole does not overlap with each of said pair of driving slots as seen in an axial direction of said cutting tool assembly.

20 **Claim 7.** A cutting tool assembly according to claim 1, wherein said at least one receiving hole consists of a plurality of receiving holes located radially outwardly of an axis of said cutting tool assembly about which said cutting tool assembly is to be rotated,

25 and wherein said at least one protrusion consists of a plurality of protrusions located in respective positions which are aligned with said plurality of receiving holes.

Claim 8. A cutting tool assembly according to claim 1, wherein said cutting tool consists of a face milling cutter having a cutting diameter of 80-160 mm.

30 **Claim 9.** An arbor which is to be fastened to a cutting tool, for providing a cutting tool assembly, said arbor comprising:

 a tapered shank portion which has a taper of 7/24 and a size of No.30;

a contact surface which is to be brought into contact with a surface of said cutting tool when said arbor is fastened to said cutting tool; and

5 a relative-rotation preventing mechanism for preventing rotation of said cutting tool relative to said arbor when said arbor is fastened to said cutting tool;

wherein said relative-rotation preventing mechanism is provided by at least one protrusion which is formed on said contact surface.

10 **Claim 10.** An arbor according to claim 9,

wherein each of said at least one protrusion is provided by a pin which is fitted in a fitting hole formed in said contact surface.

15 **Claim 11.** An arbor according to claim 9, further comprising:

a positioning boss which is formed on a central portion of said contact surface, for positioning said cutting tool in a predetermined position relative to said arbor when said cutting tool is fastened to said arbor,

20 wherein said positioning boss has an outside diameter which is not smaller than 22 mm and is not larger than 27 mm.

Claim 12. An arbor according to claim 9, further comprising:

25 an annular flange portion which provides said contact surface and which has a pair of driving slots formed in an outer circumferential surface of said annular flange portion,

wherein each of said at least one protrusion is provided by a pin which is fitted in a fitting hole formed in said contact surface,

30 and wherein said fitting hole is positioned relative to said pair of driving slots such that said fitting hole does not overlap with each of said pair of driving slots as seen in an axial direction of said arbor.

35 **Claim 13.** An arbor according to claim 9, wherein said at least one protrusion consists of a plurality of protrusions

located radially outwardly of an axis of said arbor about which said arbor is to be rotated.

5 **Claim 14.** A cutting tool which is to be fastened to an arbor including a tapered shank portion which has a taper of 7/24 and a size of No.30, for providing a cutting tool assembly, said cutting tool comprising:

at least one cutting blade,
a contact surface which is to be brought into contact with a surface of said arbor when said cutting tool is 10 fastened to said arbor; and

a relative-rotation preventing mechanism for preventing rotation of said cutting tool relative to said arbor when said cutting tool is fastened to said arbor,

15 wherein said relative-rotation preventing mechanism is provided by at least one hole which is formed in said contact surface.

Claim 15. A cutting tool according to claim 14, having an axial length that is not larger than 40 mm.

20 **Claim 16.** A cutting tool according to claim 14, wherein a number of said at least one cutting blade is not larger than six.

25 **Claim 17.** A cutting tool according to claim 14, wherein said at least one hole consists of a plurality of holes located radially outwardly of an axis of said cutting tool about which said cutting tool is to be rotated.

Claim 18. A cutting tool according to claim 14, consisting of a face milling cutter having a cutting diameter of 80-160 mm.